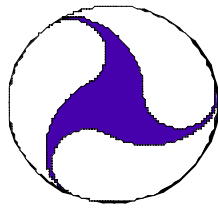


**Module 8A – Short - and Long - Term Planning Needs → Instructor's Notes**

**M8A.1: Cover Slide**

**Module 8A**  
**Short- and Long-Term**  
**Planning Needs**





## Parallel Structure

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- ◆ **Short range**

- ◆ Improve system efficiency
- ◆ Operations and management of existing components

- ◆ **Long range**

- ◆ Meet state and regional goals
- ◆ State and regional integration
- ◆ Focus of this module

Delivery:

- This is an introductory slide, so do not spend much time presenting the information. You will present details later in the Module
- Up to this point in the course, particularly the class exercise, we have focused on short-term integration needs
- We have discussed the need to improve system efficiency
  - How integrated ITS can help operate and manage the system
- This module focuses on long range integration needs
  - How ITS can supplement other strategies to meet state and regional goals
  - How the state and metropolitan planning process is used to integrate ITS across jurisdictional boundaries

Output:

- N/A

Notes:

-



## Policy Framework

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### ◆ ISTEA

#### ◆ Shift in national transportation policy

- ❖ Multimodal transportation solutions
- ❖ Improving system efficiency

### ◆ NEXTEA

- ◆ Continues policy shift
- ◆ Planning for operations and management?

#### Delivery:

- Present the major policy shifts of ISTEA
- No longer is building more roads the solution to transportation problems
- There is a recognition that we cannot “build our way out of the problem”
- New roads beget greater auto dependency (and more VMT), which begets the need for more roads
- Furthermore, greater auto dependency leads to poorer air quality
- To get out of this cycle, we must consider other transportation options
- We must also improve the efficiency of our system
- Hopefully, the earlier Modules have suggested ways in which ITS can help achieve both of these goals
- We do not know how NEXTEA will turn out, but it will likely confirm and continue the ISTEA policy shift (the name certainly implies this)
- There is a provision in the current legislation that requires the state and metropolitan planning processes to include operations and management
- This may or may not make it through the final version, thus the reason for the question mark on the slide

#### Output:

- N/A

#### Notes:

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## ITS Evolution

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- ◆ ITS deployed for years
  - ◆ Traffic signal systems, freeway management
- ◆ Integration of components
  - ◆ Occurring throughout country
- ◆ Integration into planning process
  - ◆ ITS part of solutions
- ◆ New technologies

Delivery:

- This slide helps present the concept that ITS is not new (building on a recurring theme of the course)
- It also presents the next evolutionary phases of ITS
  - Beginning with the need to integrate ITS components (which we have focused on in this course)
- Integration is occurring throughout the country and we have provided examples → there still is more to do
- The next evolutionary step is integrating ITS into the state and metropolitan planning processes
- Currently, the analysis methods and tools make it difficult to integrate ITS, but this is changing (this is discussed in more detail in a later slide)
- There may also be a mind-set that ITS is an alternative solution to a transportation problems → the mind-set should be that ITS will enhance the solution
- Of course, new technologies (such as Global Positioning System) will take ITS in new directions

Output:

- N/A

Notes:

-





## State and Regional Framework

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- ◆ Is there a need for state and regional integration?
- ◆ What is happening in your state or region?

Delivery:

- Ask the questions listed on the slide → take about five minutes to discuss
- Hopefully, participants should answer the first question with what they learned from earlier Modules
  - Such as the ability to respond to situations as they arise in the region (from Module 7)
- Hopefully, participants should provide testimonies from states and regions. If they can't, you may want to mention the integration that is happening:
  - Along the I-95 corridor in the northeast
  - In the Atlanta and Houston regions
- More about these is provided later in this Module and in Module 9.

Output:

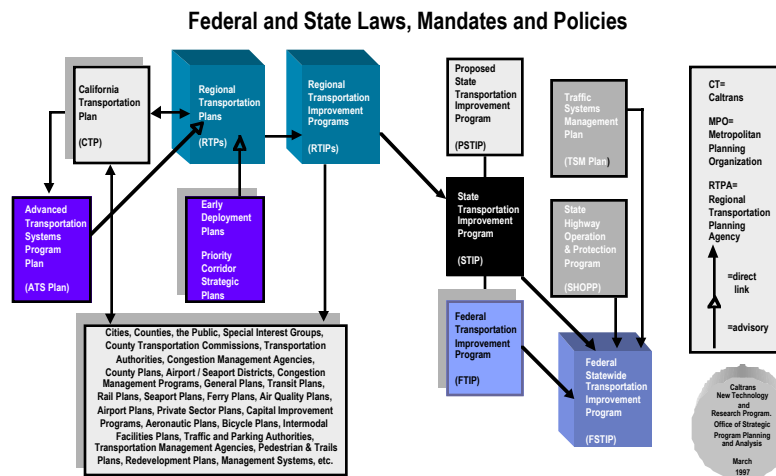
- N/A

Notes:

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## Interrelationship of Transportation Planning & Programming Documents



### Module 8A Deploying Integrated Intelligent Transportation Systems

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#### Delivery:

- This slide presents an example of how ITS is integrated into California's state and metropolitan planning processes
- The Advanced Transportation Systems Program Plan is developed as part of the Statewide Plan
- The Early Deployment Plans (EDPs) and Priority Corridor Strategic Plans are developed as part of the Regional Transportation Plans (RTPs), or MPO Transportation Plans
- The RTPs become part of the California Transportation Plan and the Regional Transportation Improvement Plans (or MPO TIPs)
- The MPO TIPs are reconciled with the Proposed State TIP to develop the STIP
- In sum, ITS is incorporated into the California Transportation Plan as well as the Regional Transportation Plans

#### Output:

- N/A

#### Notes:

- 11" x 17" pull out at back of participant guide



## Integration Challenges

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- ◆ **Institutional**

- ◆ Who's in charge? Who pays?

- ◆ **Process**

- ◆ How is ITS included in planning process?

- ◆ **Technical**

- ◆ How is technology integrated?

Delivery:

- This slide presents an overview of the challenges to integration
- The questions posed are rhetorical → do not ask these questions, rather use the questions to introduce integration challenges
- Do not spend much time on this slide, you will get into more detail on each of the bullets on the following three slides

Output:

- N/A

Notes:

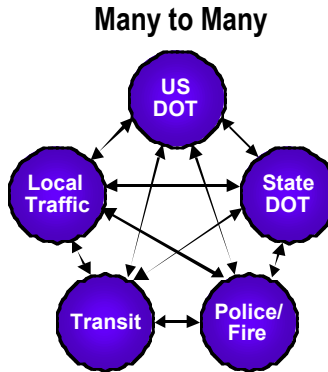
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## Institutional Challenges

- ◆ Who's in charge?
- ◆ Who funds regional efforts?
- ◆ Paradigm shift
- ◆ New players
- ◆ New roles and programs



### Delivery:

- This slide expands on the first bullet in M8A.7
- Ask the questions at the top of the slide
- You may want to ask the questions as follows:
  - In your state or region, who's in charge of state or regional integration?
  - Who is paying for state or regional integration efforts?
- Make sure you are specific about integration → you are not trying to find out about ITS deployments, rather you want the responses to specifically address state and regional integration
- If the participants are not forthcoming, then bring up the experience in Atlanta, where GDOT took the lead (with MPO support) and funding came from the federal level
- Also mention Houston, where the transit agency took the regional lead using funding from a dedicated penny sales tax
- After you have asked the questions, note that ITS integration requires new players (such as the MPO, emergency management, police, private sector, etc.) → you may want to ask if this message is clear from earlier Modules
- ITS also requires a new way of interacting.

- Instead of parallel hierarchies that do not communicate with each other, ITS requires information and data sharing
  - The lead role becomes more of a facilitation role
  - You may want to ask if this message is clear from earlier Modules
- The graph to the right illustrates the “Many to Many” organizational arrangement that replaces the parallel hierarchies

Output:

- N/A

Notes:



## Process Challenges

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- ◆ **How is ITS incorporated into planning process?**
- ◆ **Paradigm shift**
  - ◆ Major investment, long term
  - ◆ Small - large investment, short - long term
- ◆ **New evaluation methods/tools**
  - ◆ Performance measures (travel times and V/C)
  - ◆ Tools (IDAS - four step model)
  - ◆ IDAS - ITS Infrastructure Deployment Analysis System

### Delivery:

- This slide expands on the second major bullet of M8A.7
- Because you asked how ITS is being integrated into the planning process in your area earlier, the question at the top of the slide is rhetorical (unless someone is eager to add more)
- Emphasize that the planning process is being expanded to deal with added dimensions → in addition to focusing on major investments and the long term, the planning process will now take on relatively smaller investments (such as ITS) and the shorter term (within the next five years)
- In order to deal with these changing requirements (and with the new policy direction of ISTEA and NEXTEA), our planning methods and tools must change
- First, we need to define the problem correctly
  - For example, we need to rethink our performance measures
  - We need to define congestion and mobility problems using measures such as travel time rather than measures such as volume to capacity (V/C) ratios
- V/C ratios assume a problem with the roadway, thereby focusing the analysis on roadway solutions → by using travel times as the measure, additional options are considered, such as transit and ITS solutions
- Second, we need a better set of tools
  - The current four step travel demand modeling process has a long-term, major investment orientation

- We need tools that can evaluate the benefits and impacts of smaller investments, such as ITS
- The Intelligent Transportation System Deployment Analysis System (IDAS) will be developed to provide states and MPOs with a way of assessing ITS benefits and impacts
- The IDAS tools are several years away
- In the meantime, sketch planning techniques and modification of existing tools (such as integrating travel demand and simulation models) can be used

Output:

- N/A

Notes:

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## Technical Challenges

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### ◆ How are components integrated?

- ◆ Using the National ITS Architecture
- ◆ Legacy systems
- ◆ Communications standards

#### Delivery:

- We covered the bullets in this slide during the previous Modules
- Reinforce the benefits of the National Architecture
  - Don't need to start from scratch
  - Can be customized for the region
- Reinforce the need to work with legacy systems, including whether it makes sense to continue with a legacy system that can't fit the regional integration
- Reinforce the need that communications, and the ability to transfer information among components and agencies, is the key to regional integration

#### Output:

- N/A

#### Notes:

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## Planning and Programming ITS Projects

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- ◆ How have you or others identified ITS projects in your area?

Delivery:

- Ask the question on the slide
- You are trying to get examples from states and regions of how ITS projects have been identified and funded through the planning process
- Have ITS projects been identified through the planning process? (Most have not → if any have, ask how it went)
- Were ITS projects listed in the TIP or the Transportation Plan? (Most were not → if any were, ask how they were included)

Output:

- N/A

Notes:

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## **Strategy for Regional Integrated Deployment**

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- ◆ **Systematic and integrated approach to identifying ITS projects**
  - ◆ Focus on concepts, not terminology
  - ◆ Not federal requirements
- ◆ **Approach will vary**
  - ◆ Change over time
  - ◆ From area to area

**Delivery:**

- This slide introduces the next two slides, which propose a systematic approach to identifying how states and regions can plan for ITS integration and deployment
- Because the next two slides are process oriented, there must be caveats
- First, the approaches presented are not federal requirements, nor are any of the terms or words used official designations
- Second, states and regions differ, and their approaches should be tailored to the existing institutional and technical arrangements in the state and region
- Additionally, the level of detail and complexity to approaches will increase as states and region's work with state and regional integration issues
- States and regions that have not dealt with integration (both of components and with the planning process) should start simply and add detail and complexity in time

**Output:**

- N/A

**Notes:**

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## What Do We Want to Do?

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- ◆ **Stakeholders/players**
  - ◆ Decision-makers/high-level staff
  - ◆ MPO may be logical forum and lead
- ◆ **Inventory of existing conditions**
  - ◆ Physical and information sharing
- ◆ **Definition of where you want to be**
  - ◆ Physical and information sharing

Delivery:

- This slide suggests an approach for defining a regional ITS program
- The approach parallels the structure of the course, beginning with identifying stakeholders, completing an inventory of what has been deployed and identifying where the state or region wants to be
- A logical lead for this type of analysis is the MPO, although State DOTs (like Atlanta) or transit agencies (like Houston) with a regional perspective can take the lead
- Like the earlier Modules in this course, you go through an exercise of defining state or regional operational objectives that tie directly to state or regional goals in the Transportation Plan to identify ITS deployment and integration needs
- For example, you may have a regional goal of increasing system efficiency
  - There are a number of possible operational objectives for this goal, such as a regionally coordinated traffic signals or the use of Smart Cards for tolls and transit
  - Both require integration
- The ITS deployment and integration requirements defined through this process become part of the Transportation Plan

Output:

- N/A



Notes:

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## How Do We Do It?

---

- ◆ **Stakeholders/players**
  - ◆ Operations oriented staff
- ◆ **Architecture**
  - ◆ Subsystems (by stakeholder agency)
  - ◆ Information flows (not data elements)
- ◆ **Operations requirements**
  - ◆ Concept-of-operations
  - ◆ Roles, responsibilities of players

### Delivery:

- This slide suggests an approach to preparing an implementation strategy for a regional ITS
- This builds on the Needs identified in the previous slide
- The stakeholders to involve in identifying an implementation strategy are operations-oriented staff, who can come from a number of agencies
- A regional architecture is defined at this step, using the general framework from the Transportation Plan and the same sort of steps covered in earlier Modules of this course
- Subsystems and information flows are defined (as covered in Module 3A), which lead to operations requirements (concept of operations) and the roles and responsibilities of players (as covered in Module 4A)
- For example, for the operational objective of regional signal coordination, agencies will define the information that needs to be shared, how they will work together to share the information and the methods each will use to apply the information

### Output:

- N/A

### Notes:

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- **M8A.15: How Do We Do It? (Continued)**

**(2 min)**



## **How Do We Do It? (cont.)**

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- ◆ **Part of Transportation Plan and Transportation Improvement Program**
- ◆ **Phasing**
  - ◆ **Geographic**
  - ◆ **Functional**
- ◆ **Regional Technology “Agreement”**
  - ◆ **Telecommunications**
  - ◆ **Technologies**

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Delivery:

- You need to emphasize that the information and recommendations developed must be integrated into the Transportation Plan and the Transportation Improvement Program
- To do so, improvements need to be phased over time (there seldom is enough money to do it all). Phasing questions to answer are:
  - What are the high priority areas?
  - What makes sense given what has been deployed and what will be deployed?
- Regional agreements (or memoranda of understanding) are needed to make deployments fit together. Telecommunication, technology and institutional agreements are needed (as we discussed in earlier modules)

Output:

- N/A

Notes:

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## Summary

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- ◆ **Short- and long-term focus**
  - ◆ Added dimensions and new players
- ◆ **Challenges ahead**
  - ◆ Institutional, process and technical
- ◆ **ITS and the Transportation Plan**

Delivery:

- This is a wrap-up slide
- Highlights of Module 8 are:
  - A short term (and relatively small investment) perspective is added to the planning process that requires new methods, tools and institutional arrangements
  - There are challenges ahead, such as new institutional arrangements, roles and responsibilities, added dimensions to the planning process and the continued evolution of technology
  - ITS deployments and integration needs must fit into the Transportation Plan (in order to be included in the TIP)

Output:

- N/A

Notes:

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